

Author's response to editor's initial decision

line 21: ... with and VERTICAL accuracy ... ?

Now reads:

...extraction of high-resolution digital elevation models with **vertical** accuracies of ± 1.9 m...

204: Is the bathymetry published? Reference? Or is it your work?

The bathymetry was provided by another member of our group and is yet to be published. We have referenced these data as "(Chauché, unpublished)" in the text.

408: ... surface ablation can likely not account ..., or something like that. I could imagine the DDF also have their uncertainty, and I am not sure if they are meant for highly crevassed calving fronts.

It is likely that DDF have uncertainties therefore we use a range of 6 – 10 mm per degree per day when calculating ablation. We are aware that this is an extremely simple approach and so we state that... "these questions are beyond the scope of the datasets presented here and require a study of greater areal extent and temporal coverage." ...at the end of the paragraph.

Fig 1: background Landsat image quite dark.

Changed the background to a true colour Landsat 8 image

591: Howat et al. Please replace with reference to the according The Cryosphere paper!

Changed to:

Howat, I. M., Negrete, A., and Smith, B. E.: The Greenland Ice Mapping Project (GIMP) land classification and surface elevation data sets, *The Cryosphere*, 8, 1509-1518, doi:10.5194/tc-8-1509-2014, 2014.

In your response letter, you have not explicitly dealt with the 2nd comment of Matt Nolan on Section 2.4. ("It would be nice here if you would state the misfit that agisoft gave ..."). Have you dealt with it in the text?

Yes, we feel we have addressed this issue stating:

"...the relative positional errors between the DEMs constructed from different sorties were up to 17.12 m horizontally and 11.38 m vertically."

And:

"After processing with the CPs, a flat sea level across the glacier front was produced and the relative errors between the three DEMs were reduced to ± 1.41 m horizontally and 1.90 m vertically."